

**REMARKS**

At the time of the Office Action dated October 7, 2002, claims 1-124 were pending in this application. Of those claims, claims 13-16, 27, 40-43, 54-124 are withdrawn from consideration pursuant to 37 C.F.R. §1.142(b). Claims 1, 5-8, 17-25, 28, 32-35, 44-49, 51 and 52 have been rejected under 35 U.S.C §102(b) as being anticipated by Appel et al. (U.S. Patent No. 3,953,134) and claims 1-4, 9-10, 28-31, 36 and 37 have been rejected under 35 U.S.C §102(e) as being anticipated by Hendrix (U.S. Patent No. 6,115,927). Claim 50 is objected to under 37 C.F.R. §1.75 as being a substantial duplicate of claim 48.

Applicants acknowledge, with appreciation, with the Examiner's allowance of claims 26 and 53. Applicants also acknowledge, with appreciation, the Examiner's indication that claims 11, 12, 38 and 39 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Figure 1, the specification, and claims 7 and 53 have been amended consistent with the Examiner's suggestions.

Claims 5, 7, 9, 11, 17, 28, 29, 34, 51 and 53 have been amended, claims 1-4, 10 and 50 have been cancelled, and new claims 125-146 have been added. Care has been exercised to avoid the introduction of new matter. Specifically, claim 28 has been amended to include the limitation "a vision imaging system configured to acquire an image of the target body to generate image information describing geometric characteristics and positional interrelationships of the target elements disposed on the target body imaged, and to relate such image information to predetermined reference information describing the known geometric characteristics and positional interrelationships of the target elements to determine a location and angular orientation of the target body." The amendment to claim

28 finds adequate descriptive support throughout the originally filed disclosure as, for example, column 9, line 41 through column 10, line 61 of U.S. Patent No. 5,724,743 which is incorporated into the disclosure by reference.

Claims 5, 9, 11 and 17 have been amended to place the claims in independent form including all of the limitations recited in independent claim 1 and any intervening claims, upon which claims 5, 9, 11 and 17 depend. As a result of this amendment, claims 11 and 12 which are objected to as being dependent upon a rejected base claim, would now be ready for allowance.

In addition to the Examiner's suggestion, claim 7 has simply been amended to clarify the claimed limitation. The amendment herein to claim 34 has also been made in the same way as that made to claim 7. The amendment to claims 7 and 34 finds adequate descriptive support throughout the originally filed disclosure as, for example, on page 15, line 19 through page 16, line 7. Claim 29 has been amended to clarify the limitation. Claim 51 has also been amended to revise its dependency so as to depend on claim 49 in relation to cancellation of claim 50.

New Claims 125 and 126 contain the limitation previously presented in original claim 9. Claim 127 contains the limitation presented in original claim 22.

New claim 128 and 136 each have been added as independent form of original claims 32 and 44, respectively and include all of the limitations recited in original independent claim 28, upon which claims 32 and 44 directly depend. Dependent claims 129-131 each contain the limitation presented in original claims 33-35, respectively. Claim 133 contains the limitations presented in original claims 28, 36 and 37. Claim 134 also contains the limitations presented in original claims 28, 36 and 38. Claims 132 and 145

contain the limitation previously presented in original claim 36. Claims 137-140 and 142-144 contain the limitation presented in original claims 45-49, 51 and 52, respectively. Claim 141 contains the limitation presented in original claim 22. Claim 146 has been added based on amended claim 28.

A clean copy of amended claims 5, 7, 9, 11, 17, 28, 29, 34, 44, 51 and 53, and new claims 125-146 appear in the Appendix hereto.

#### **Drawing Objections.**

The Examiner objected to Fig. 1 of the drawings, requiring that which is old be labeled as "Prior Art." In response, it is proposed to amend Fig. 1, as indicated in red on the attached photocopies, to label these figures as prior art. Also, accompanying this Amendment is a Request for Approval of Drawing Amendment and proposed drawing corrections for Fig. 1 with the changes indicated in red ink.

Accordingly, withdrawal of the objections to the drawings is solicited.

#### **Specification Objections.**

The disclosure is objected to because of informalities. In response, each of informalities of the disclosure has been addressed in a manner consistent with the Examiner's suggestions thereby overcoming the stated bases for the objection to the disclosure.

Therefore, Applicants solicit withdrawal of the specification objections.

#### **Claim Objections.**

The Examiner objected to claims 7 and 53 identifying informalities. In response, each of the informalities in claims 7 and 53 identified by the Examiner has been addressed in a manner consistent with the Examiner's suggestions thereby overcoming the stated bases for the objection to the claims. The objections to claims 7 and 15 are now moot.

Applicants, therefore, solicit withdrawal of the claim objections.

### **Duplicate Claims**

Claim 50 is objected to under 37 C.F.R. §1.75 as being a substantial duplicate of claim 48. In response, it is proposed to cancel claim 50 to eliminate the duplicate issue. In relation to cancellation of claim 50, the dependency of claim 51 has been revised so as to depend from claim 49.

Accordingly, the objection to claim 50 has been rendered moot and withdrawal thereof is solicited.

**Claims 1, 5-8, 17-25, 28, 32-35, 44-49 and 51-52 are rejected under 35 U.S.C. §102(b) as being anticipated by Appel et al.**

In the statement of the rejection, the Examiner asserted that Appel et al. discloses in Figures 1, 3 and 5 a target system identically corresponding to those claimed. This rejection is traversed as factually erroneous.

### **Claims 1 and 28.**

The factual determination of lack of novelty under 35 U.S.C. §102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the possession of one having ordinary

skill in the art. *Helifix Ltd. v. Blok-Lok, Ltd.*, 208 F. 3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994). There are significant differences between the claimed invention and an automotive wheel alignment instrument disclosed by Appel et al. that scotch the factual determination that Appel et al. identically describe the claimed invention within the meaning of 35 U.S.C. §102.

The rejection of claim 1 has been rendered moot by cancellation of claim 1. Claim 28 is directed to a position determination system which is used to determine the location of a position on a vehicle. To define the position to be determined, the system uses a point definer extending from the target body and including a point being located adjacent the position on the vehicle. On the other hand, Appel et al. discloses an automotive wheel alignment instrument wherein the angles of toe are indicated directly on a target screen 65 whose graduations 66 are labeled with corresponding toe angles (column 4, lines 3-5). That is, Appel et al. discloses an instrument for measuring the angular relationship between the front wheels and frame of a vehicle, but does not disclose an instrument for determining the location of a position on a vehicle. The Examiner asserted that an arm 14 and pin 72 of Appel et al. correspond to the claimed point definer and point, respectively. However, Appel et al. discloses that the pin 72 fits into the axial recess at the end of the wheel spindle to accurately align the unit with the axis of rotation of the wheel (column 3, lines 24-53). Therefore, because the arm 14 and pin 72 of Appel et al. are used to attach the instrument accurately to a wheel, that is, they are used as a connector, Appel et al. does not disclose the claimed point definer.

The above-argued fundamental difference between the claimed invention and Appel et al. undermines the factual determination that Appel et al. identically describes the claimed invention within the meaning 35 U.S.C. §102. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Applicants, therefore, submit that the imposed rejection of claim 1 under 35 U.S.C. §102(b) for lack of novelty as evidenced by Appel et al. is not factually viable and, hence, solicit withdrawal thereof.

**Claims 5-8, 17-25, 32-35, 44-49 and 51-52.**

A dependent claim is not anticipated if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claim.

Although claims 5 and 17 are now in independent form as a result of amendment, they include all of the limitations recited in original independent claim 1, upon which original claims 5 and 17 depend. Original claim 1 includes all the limitations recited in claim 28 except for a vision imaging system.

Therefore, claims 5 and 17 are patentable because they include all the limitations of original claim 1 which can distinguish those claims from Appel et al. Dependent claims 6-8 and 18-25 depending from claims 5 and 17 are also patentable because all the limitations of claims 5 and 17 are contained in the dependent claims. Further, dependent claims 32-35, 44-49 and 51-52 are patentable because they include all the limitations of independent claim 28. The Examiner's additional comments with respect to claims 5-8,

17-25, 32-35, 44-49 and 51-52 do not cure the argued fundamental deficiencies of Appel et al.

In more detail, claims 6, 7, 33 and 34 include limitations relating to one or more joints which allow the point on the point definer to rotate about one or more axis, an example of which is shown in Figs. 3A and 3B. This gives a target system more freedom when it points a certain position on a vehicle with the point definer. Appel et al. does not teach or suggest a point definer which has the above-described joints. Further, claims 19, 20, 22, 46 and 47 are each directed to a receiver and connector which connects a target system to a certain location of a vehicle. Both the receiver and connector have a reference feature which defines the positional relationship between the point on the point definer and a position on a vehicle, making it easier to determine the location of a position on a vehicle. An example of the receiver and connector is shown in Fig. 7A. Appel et al. does not teach or suggest a receiver and connector which have the above-described reference feature.

Applicants traverse the rejections of those claims and solicit withdrawal thereof.

**Claims 1-4, 9-10, 28-31 and 36-37 are rejected under 35 U.S.C. §102(e) as being anticipated by Hendrix.**

In the statement of the rejection, the Examiner asserted that Hendrix discloses in Figures 2, 9 and 14 an automotive measuring device identically corresponding to those claimed.

**Claims 1 and 28.**

This rejection is traversed as factually erroneous. *Helifix Ltd.*, 208 F. 3d 1339; *Electro Medical Systems S.A.*, 34 F.3d 1048. There are significant differences between

the claimed invention and an automotive measuring device disclosed by Hendrix that scotch the factual determination that Hendrix identically describe the claimed invention within the meaning of 35 U.S.C. §102.

The rejection of claim 1 has been rendered moot by cancellation of claim 1. Claim 28 is directed to a position determination system including a vision imaging system configured to acquire an image of the target body to generate image information describing geometric characteristics and positional interrelationships of the target elements disposed on the target body imaged, and to relate such image information to predetermined reference information describing known geometric characteristics and positional interrelationships of the target elements to determine a location and angular orientation of the target body. On the other hand, Hendrix discloses an automotive measuring device wherein a computer determines the location of emitters 14 by triangulation and determine the location of a point 47 being measured by a probe 18A (column 5, line 64 to column 6, line 1, and column 9, lines 39-59). In other words, Hendrix discloses a device which is configured to use triangulation, but does not disclose a device which is configured to use imaging.

The above-argued fundamental difference between the claimed invention and Hendrix undermines the factual determination that Hendrix identically describes the claimed invention within the meaning 35 U.S.C. §102. *Minnesota Mining & Manufacturing Co., 976 F.2d 1559; Kloster Speedsteel AB, 793 F.2d 1565*. Applicant, therefore, submits that the imposed rejection of claim 28 under 35 U.S.C. §102(e) for lack of novelty as evidenced by Hendrix is not factually viable and, hence, solicit withdrawal thereof.



**Claims 9 and 10.**

The rejection of claim 10 has been rendered moot by cancellation of claim 10. Claims 9 has been amended so as to include all of the limitations recited in original independent claim 1 upon which original claim 9 depends and also include all the limitation recited in original claim 10 which depends from original claim 9.

The Examiner asserted that Hendrix discloses a trigger which is positioned on the target body and is remote from the position determination system, for operating the detection of the target system by the position determination system. Although Hendrix discloses a trigger 43 shown in Fig. 14 which enables the user to remotely control the measurements, the trigger 43 is not positioned on the target body (probe 18).

Therefore, Hendrix does not disclose all the limitations recited in amended claim 9. Applicants solicit withdrawal of the imposed rejection of original claim 9 under 35 U.S.C. §102(e) for lack of novelty as evidenced by Hendrix.

**Dependent claims 2-4, 29-31, and 36-37.**

The rejection of dependent claims 2-4 has been rendered moot by their cancellation.

A dependent claim is not anticipated if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claim. Accordingly, as claim 28 is patentable for the reasons set forth above, it is submitted that dependent claims 29-31 and 36-37 which each depend on claim 28, respectively, are also patentable. Especially, claim 37 is directed to a trigger which is positioned on the target body, an example of which is shown in Figs. 4A and 4B. As setting forth above, Hendrix does not teach or suggest such a trigger.

Applicants traverse the rejections of those claims and solicit withdrawal thereof.

**New claims 125-127.**

New claims 125-127 are free of the applied prior art by virtue of its dependence upon independent claims 5, 17 and 28, the patentability of which has been noted supra.

**New claims 128-132.**

New independent claim 128 is the independent form of original dependent claim 32, which includes all the limitations recited in original claim 28. Claim 128 recites, among other things, a point definer having one or more joints that enable the point to be positioned at a different location relative to the target body. Appel et al. and Hendrix do not identically disclose the structure claimed in claim 128.

In the statement of the rejection of claims 5-8 and 32-35, the Examiner asserted that Appel et al. discloses the point definer including one or more joints (tubular section 18) corresponding to that claimed. However, according to Appel et al., usage of the tubular section 18 is to fix a tube 15 in a predetermined position in a mount 16 (column 1, line 65 through column 2, line 3).

Since independent claim 128 is patentable as mentioned above, dependent claims 129-132 which each depend on claim 128 are also patentable.

**New claims 133.**

New independent claim 133 is the independent form of original dependent claim 36, which includes all the limitations recited in original claim 28 and also includes all the

limitation recited in original claim 37. Claim 133 includes, among other things, a trigger for operating the detection of the target system by the vision imaging system, the trigger which is positioned on the target body and is remote from the vision imaging system. Appel et al. and Hendrix do not identically disclose the structure claimed in claim 133.

In the statement of the rejection of claims 9-10 and 36-37, the Examiner asserted that Hendrix discloses a trigger (Fig. 14, trigger 43). However, Hendrix does not disclose a trigger corresponding to that recited in claim 133 for the reason set forth with respect to claim 9.

**New claims 134 and 135.**

New independent claim 134 is the independent form of original dependent claim 38 which includes all the limitations recited in original claims 28 and 36. Since the Examiner admitted that original claims 38-39 would be allowable if rewritten in independent form, claim 134 and dependent claim 135 which depends on claim 134 are patentable.

**New claims 136-145.**

New independent claim 136 is the independent form of original dependent claim 44, which includes all the limitations recited in original claim 28. Claim 136 recites, among other things, an attachment device to stabilize the position of the target body relative to the vehicle and the point on the point definer relative to the position of the vehicle to be located. Appel et al. and Hendrix do not identically disclose the structure claimed in claim 136.

In the statement of the rejection of original claims 17-25, 44-49 and 51-52, the Examiner asserted that Appel et al. discloses an attachment device (Fig. 5, magnetic

mounting clamp 17) corresponding to that claimed. However, Appel et al. does not disclose the attachment device which stabilize the point on the point definer, because Appel et al. does not disclose a point definer.

Since independent claim 136 is patentable as mentioned above, dependent claims 137-145 which each depend on claim 136 are also patentable.

**New claim 146.**

New independent claim 146 has been prepared based on amended claim 28. Claim 148 includes, among other things, the limitations "imaging means configured to acquire an image of the body means to generate image information describing geometric characteristics and positional interrelationships of the element means disposed on the body means imaged, and to relate such image information to predetermined reference information describing known geometric characteristics and positional interrelationships of the element means to determine a location and angular orientation of the body means." Appel et al. and Hendrix do not identically disclose the limitations recited in claim 146.

It should, therefore, be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

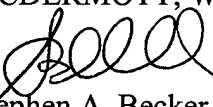
**Request for Rejoinder**

Applicants respectfully solicit rejoinder of non-elected claims 40-43 and 54 upon allowance of generic claim 28 pursuant to MPEP §806.04(d) and 37 C.F.R. §1.141.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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APPENDIXIN THE SPECIFICATION

The paragraph beginning at page 23, line 10 now reads as follows:

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The attachment device 250 can also include a receiver 256 to which other portions of the target system 200, such as the target body (not shown) and point definer 214 are attached. The receiver 256 can also include a reference feature 258 that, when used in conjunction with the point P of the point definer 214, defines the position of the attachment device 250 relative to the point P and therefore also defines the position of the attachment device 250 relative to the target body. The connector 252 and the reference feature 258 are at a known positional relationship to each other. As such, the positional relationship of the point P and the target body to the feature to which the connector 252 is attached can also be determined.

The paragraph beginning at page 26, line 7 now reads as follows:

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Attachments devices 316 are known in the art, and the target system 300 is not limited as to particular type. However, in a current aspect, the attachment device 316 includes an attachment arm 318 connected at one end to the body 310 by a first pivot 320, which enables the attachment arm 318 to pivot relative to the body 310. Also, at the other end, the attachment arm 318 can be connected to a connector 322 by a second pivot 324, which enables the attachment arm 318 to pivot relative to the connector 322. The connector 322 can also include one or more suction cups 326, which allow for a detachable connection to the vehicle 302. In operation, the attachment device 316 can advantageously adjust to

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differing vehicle profiles because the first and second pivots 320, 324 allow for reorientation of both the attachment arm 316 and the connector 322 relative to the body 310.

The paragraph beginning at page 35, line 19 now reads as follows:

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An additional example of the target system in use is schematically illustrated in Fig 13. In this aspect, the target system is to obtain a measure of the alignment of the body of the vehicle relative to the wheels. As is known in the art, the body of the vehicle may be located on a frame of the vehicle or the body may be combined with the frame into what is known as a unibody. Although, for example, the frame of the vehicle may be perfectly aligned with the wheels of the vehicle, the body may not be aligned on the frame, and the body can therefore point in a different direction than the wheels. This misalignment between the body and wheels can reduce the aerodynamic efficiency of the vehicle; and therefore, a method of measuring this misalignment using the target system and the position determination system is provided.

#### IN THE CLAIMS

Claims 5, 7, 9, 11, 17, 28, 29, 34, 51 and 53 now reads as follows:

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5. (Amended) A target system for use with a position determination system in determining the location of a position on a vehicle, comprising:
- a target body;
  - one or more target elements disposed on the target body and detectable by the position determination system; and

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a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle, the point definer further including one or more joints that enable the point to be positioned at a different location relative to the target body,

wherein the position determination system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

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7. (Amended) The system according to claim 5, wherein the point definer includes one joint allowing the point to rotate along one axis, the point being positionable in any one of three positions relative to the target body.

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9. (Amended) A target system for use with a position determination system in determining the location of a position on a vehicle, comprising:

a target body;

one or more target elements disposed on the target body and detectable by the position determination system;

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle, and

a trigger for operating the detection of the target system by the position determination system, the trigger which is positioned on the target body and is remote from the position determination system,

wherein the position determination system is configured to determine a location of the target body after detecting the target elements disposed on the target body.



11. (Amended) A target system for use with a position determination system in determining the location of a position on a vehicle, comprising:

a target body;

one or more target elements disposed on the target body and detectable by the position determination system;

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle, and

a trigger for operating the detection of the target system by the position determination system, wherein the trigger operates the position determination system by selectively changing the detection of one or more of the target elements by the position determination system,

wherein the position determination system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

17. (Amended) A target system for use with a position determination system in determining the location of a position on a vehicle, comprising:

a target body;

one or more target elements disposed on the target body and detectable by the position determination system;

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle; and

an attachment device to stabilize the position of the target body relative to the vehicle and the point relative to the position of the vehicle to be located,

wherein the position determination system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

28. (Amended) A position determination system for determining the location of a position on a vehicle, comprising:

a target system including

a target body,

one or more target elements disposed on the target body and detectable by the position determination system, and

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle; and

a vision imaging system configured to acquire an image of the target body to generate image information describing geometric characteristics and positional interrelationships of the target elements disposed on the target body imaged, and to relate such image information to predetermined reference information describing known geometric characteristics and positional interrelationships of the target elements to determine a location and angular orientation of the target body.

29. (Amended) The system according to claim 28, wherein the point on the point definer is at a known location with respect to the target body.

34. (Amended) The system according to claim 32, wherein the point definer includes one joint allowing the point to rotate along one axis, the point being positionable in any one of three positions relative to the target body.

51. (Amended) The system according to claim 49, wherein the reference feature and the receiver prevent movement of the point definer relative to the attachment device in three axes.

53. (Amended) A position determination system for determining the location of a position on a vehicle, comprising:

a vision imaging system; and

a target system including

a target body;

one or more target elements disposed on the target body and detectable by the vision imaging system;

a trigger positioned on the target body and remote from the vision imaging system, the trigger operating the vision imaging system by selectively changing the detection of one or more of the target elements by the vision imaging system; and

a point definer extending from the target body, and the point definer including a point at a distal end of the point definer, the point being capable of being located adjacent the position on the vehicle, and the point is at a known location from the target body;

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wherein the vision imaging system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

Claims 125 through 146 read as follows:

125. (New) The system according to claim 5, further comprising a trigger for operating the detection of the target system by the position determination system.

126. (New) The system according to claim 17, further comprising a trigger for operating the detection of the target system by the position determination system.

127. (New) The system according to claim 45, wherein the receiver includes a reference feature that defines the position of the connector relative to the point on the point definer.

128. (New) A position determination system for determining the location of a position on a vehicle, comprising:

a vision imaging system; and

a target system including

a target body,

one or more target elements disposed on the target body and detectable by the position determination system, and

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle, the point

definer further including one or more joints that enable the point to be positioned at a different location relative to the target body;

wherein the vision imaging system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

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129. (New) The system according to claim 128, wherein the one or more joints each allow rotation of the point in one or more axis relative to the target body.

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130. (New) The system according to claim 128, wherein the point definer includes one joint allowing the point to rotate along one axis, the point being positionable in any one of three positions relative to the target body.

131. (New) The system according to claim 128, wherein each joint includes a lock to selectively prevent or allow movement of the point relative to the target body.

132. (New) The system according to claim 128, further comprising a trigger for operating the detection of the target system by the vision imaging system.

133. (New) A position determination system for determining the location of a position on a vehicle, comprising:

a vision imaging system; and

a target system including

a target body,

one or more target elements disposed on the target body and detectable by the position determination system,

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle, and

a trigger for operating the detection of the target system by the vision imaging system, the trigger which is positioned on the target body and is remote from the vision imaging system;

wherein the vision imaging system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

134. (New) A position determination system for determining the location of a position on a vehicle, comprising:

a vision imaging system; and

a target system including

a target body,

one or more target elements disposed on the target body and detectable by the position determination system,

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle, and

a trigger for operating the detection of the target system by the vision imaging system, wherein the trigger operates the position determination system by selectively changing the detection of one or more of the target elements by the vision imaging system;

wherein the vision imaging system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

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135. (New) The system according to claim 134, wherein the trigger is movable between first and second positions, and in a first position, the trigger conceals the one or more target elements from the vision imaging system, and in the second position, the trigger exposes the one or more target elements to the vision imaging system.

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136. (New) A position determination system for determining the location of a position on a vehicle, comprising:

a vision imaging system;

a target system including

a target body,

one or more target elements disposed on the target body and detectable by the position determination system, and

a point definer extending from the target body, the point definer including a point capable of being located adjacent the position on the vehicle; and

an attachment device to stabilize the position of the target body relative to the vehicle and the point on the point definer relative to the position of the vehicle to be located;

wherein the vision imaging system is configured to determine a location of the target body after detecting the target elements disposed on the target body.

137. (New) The system according to claim 136, wherein the attachment device further comprises a receiver to which the point definer is attached and a connector that connects with the vehicle.

138. (New) The system according to claim 137, wherein the receiver includes a reference feature that defines the position of the attachment device relative to the point on the point definer.

139. (New) The system according to claim 138, wherein the connector defines a positional relationship between the position on the vehicle to be located and the reference feature.

140. (New) The system according to claim 137, wherein the receiver defines a cylindrical recess into which a portion of the point definer is inserted.

141. (New) The system according to claim 137, wherein the receiver includes a reference feature that defines the position of the connector relative to the point on the point definer.

142. (New) The system according to claim 137, wherein the attachment device is adapted to be attached to a strut of the vehicle.



143. (New) The system according to claim 142, wherein the reference feature and the receiver prevent movement of the point definer relative to the attachment device in three axes.

144. (New) The system according to claim 143, wherein the reference feature is a flat plane bounding a portion of the recess.

145. (New) The system according to claim 136, further comprising a trigger for operating the detection of the target system by the vision imaging system.

146. (New) A position determination system for determining the location of a position on a vehicle, comprising:

target means including

body means,

element means disposed on the body means and detectable by the position determination system, and

defining means extending from the body means, the defining means including point means capable of being located adjacent the position on the vehicle; and

imaging means configured to acquire an image of the body means to generate image information describing geometric characteristics and positional interrelationships of the element means disposed on the body means imaged, and to relate such image information to predetermined reference information describing known geometric characteristics and

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positional interrelationships of the element means to determine a location and angular  
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